

**Basement Impact  
Assessment Audit**

181 Arlington Road, London,  
NW1 7ET

For  
London Borough of Camden

Project No.  
14291-08

Date  
February 2025

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## DOCUMENT HISTORY AND STATUS

Revision	Date	Purpose/ Status	File Ref	Author	Check	Review
D1	27/01/2025	For comment	RAgk14291-08- 270125-161 Arlington Road_D1	RA	GK	GK
F1	10/02/2025	Final	RAgk14291-08- 100225-161 Arlington Road_F1	RA	GK	GK

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### Document Details

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Project Number	14291-08
Project Name	Basement Impact Assessment Audit
Revision	F1
Planning Reference	2024/5053/P
File Ref	RAgk14291-08-100225-161 Arlington Road_F1.docx

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## 1.0 NON-TECHNICAL SUMMARY

- 1.1 CampbellReith was instructed by London Borough of Camden, (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for 161 Arlington Road, London NW1 7ET (planning reference 2024/5053/P). The basement is considered to fall within Category A as defined by the Terms of Reference.
- 1.2 The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.
- 1.3 CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and reviewed it against an agreed audit check list.
- 1.4 The BIA has been prepared by Cochrane Construction Consultants. The authors' qualifications do not comply with the requirements of CPG: Basements; however, the assessment has been reviewed by those who hold suitable qualifications.
- 1.5 The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. The BIA outlines the construction methodology and recommends temporary propping is installed for the existing basement walls during the site preparation stage.
- 1.6 It is unlikely that the groundwater table will be encountered during basement foundation excavation. However, water ingress was noted in a foundation exposure pit. Mitigation measures for water ingress during construction have been provided.
- 1.7 It is accepted that the development will not impact on the local and wider hydrogeology of the area.
- 1.8 It is accepted the basement will not impact upon hydrology.
- 1.9 It is accepted the basement, provided good workmanship is employed, will not impact the stability of the neighbouring properties and public highway.
- 1.10 The BIA recommends movement monitoring is undertaken during excavation and construction as a mitigation measure.
- 1.11 It is confirmed that the BIA complies with the requirements of CPG: Basements and the Principles for Audit set out in the Basement Impact Assessment (BIA) Audit Service Terms of Reference & Audit Process.

## 2.0 INTRODUCTION

2.1 CampbellReith was instructed by London Borough of Camden (LBC) on 2<sup>nd</sup> December 2024 to carry out a Category A audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for 161 Arlington Road, London, NW1 7ET, reference 2024/5053/P.

2.2 This application forms an amendment to a previous application, reference 2024/1376/P that was refused on the 16<sup>th</sup> August 2024.

2.3 The audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.4 A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within

- Camden Local Plan 2017 - Policy A5 Basements.
- Camden Planning Guidance (CPG): Basements. January 2021.
- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.

2.5 The BIA should demonstrate that schemes:

- a) maintain the structural stability of the building and neighbouring properties;
- b) avoid adversely affecting drainage and run off or causing other damage to the water environment;
- c) avoid cumulative impacts upon structural stability or the water environment in the local area;

and evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.6 LBC's Audit Instruction described the planning proposal as "Removal of existing conservatory and erection of a single-storey ground floor extension with a rear basement extension below, plus part-infill of existing lightwell to the front, with installation of new balustrade railings to first floor window and repainting of existing shopfront."

2.7 The reports provided on the planning portal confirm 161 Arlington Road is a Grade II Listed building.

2.8 CampbellReith accessed LBC's Planning Portal on 18<sup>th</sup> December 2024 and gained access to the following relevant documents for audit purposes:

- Design Study Report (DTS) produced by Cochrane Construction Consultants, dated November 2024, reference S2930, revision 02
- Basement Impact Assessment (BIA) produced by Cochrane Construction Consultants, dated November 2024, reference S2930, revision 02
- Basement Impact Assessment Screening & Scoping Report produced by Cochrane Construction Consultants, dated November 2024, reference S2930, revision 02
- Letter from HK Hydrology dated 21<sup>st</sup> November 2024 reference 2388.
- Letter from H Fraser Consulting dated 27<sup>th</sup> November 2024, reference 31005 L1
- Drawings provided by Studio 309 dated October to November 2024 include the following
  - Existing Location and Site Plan, reference 001C-001
  - Proposed Location and Site Plan, reference 001C-002
  - Existing plans, reference 001C-010 and 001C-011
  - Proposed plans, reference 001C-020 and 001C-021
  - Existing elevation and sections, reference 001C-015, 001C-016 and 001C-017
  - Proposed elevation and sections, reference 001C-025, 001C-026 and 001C-027

### 3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	Letters provided to confirm the BIA has been reviewed by those with suitable qualifications have been provided.
Is data required by Cl.233 of the GSD presented?	Yes	
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	BIA report
Are suitable plan/maps included?	Yes	BIA desk study report
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	BIA desk study report
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA screening and scoping report
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA screening and scoping report
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	BIA screening and scoping report
Is a conceptual model presented?	Yes	BIA report, Section 8.3
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA screening and scoping report

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	BIA screening and scoping report
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	None
Is factual ground investigation data provided?	Yes	Available from previous application
Is monitoring data presented?	No	
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	
Is a geotechnical interpretation presented?	Yes	BIA report, Section 8.3
Does the geotechnical interpretation include information on retaining wall design?	Yes	BIA report, Section 8.3
Are reports on other investigations required by screening and scoping presented?	N/A	
Are the baseline conditions described, based on the GSD?	Yes	
Do the baseline conditions consider adjacent or nearby basements?	Yes	BIA report, Section 5.2
Is an Impact Assessment provided?	Yes	BIA report, Section 9.0
Are estimates of ground movement and structural impact presented?	Yes	BIA report, Section 8.7



Item	Yes/No/NA	Comment
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	Section 8.9 in BIA
Has the need for monitoring during construction been considered?	Yes	Section 8.10 in BIA
Have the residual (after mitigation) impacts been clearly identified?	Yes	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	BIA report, Section 8.7
Are non-technical summaries provided?	Yes	

## 4.0 DISCUSSION

- 4.1 This application forms part of an amendment of a previous application (ref. 2024/1376/P) which was refused on the 16<sup>th</sup> August 2024. The BIA submitted under the previous application did not comply with the requirements of CPG: Basements and the Principles for the Audit for the following reasons:
- The authors did not hold suitable qualifications in accordance with the requirements of CPG: Basements.
  - Mitigation measures for water ingress during construction were not provided.
- 4.2 The BIA for the current application (2024/5053/P) has been carried out by engineering consultants Cochrane Construction Consultants (CCC). The author does not hold suitable qualifications to comply with CPG: Basements; however, letters have been provided by HK Hydrology and H Fraser Consulting to confirm that the BIA report has been reviewed by individuals with suitable qualifications.
- 4.3 The Desk Study report identifies that the host building (no. 161) and the neighbouring properties (no.157 and 159) are Grade II Listed buildings. The proposed basement is in the Camden Town Conservation Area. The Lady of Hal Church is located on the northern boundary.
- 4.4 The BIA outlines that the proposed redevelopment includes the demolition of the rear extension at basement and ground floor levels, extending the existing basement to the current ground floor footprint and lowering the floor by 0.40m.
- 4.5 The lowering of the basement floor involves excavating 0.75m below the current floor level. The intended method of construction is underpinning the existing foundations in a hit-and-miss sequence and forming a reinforced concrete basement. The BIA states temporary propping should be used as required. No underpinning is required along the party wall as this was done during the construction of the church.
- 4.6 The BIA has been informed by a desk study and site-specific ground investigation including a borehole and four trial pits. The ground conditions encountered comprise Made Ground over weathered brown clay of the London Clay Formation.
- 4.7 Water was encountered in foundation exposure pit TP2; this was determined to possibly represent small pockets of perched water within the Made Ground. Groundwater was encountered in BH1 at 4.90m below ground level (bgl) during drilling. However, the BIA acknowledges that the borehole was then backfilled, and no subsequent groundwater monitoring was undertaken.
- 4.8 The BIA states that the existing foundations at 161 Arlington Road are between 0.36m and 0.48m depth below existing basement floor level and comprise shallow strip footings on the London Clay Formation. The BIA states the basement flank wall adjacent to the church has been previously underpinned to between 0.68m to 1.00m below existing basement floor level.
- 4.9 The screening & scoping report (issued separately to the main BIA report) confirms the following:

- The site is directly underlain by London Clay Formation which is classified as an unproductive aquifer.
- It is unknown if the proposed basement will extend below the water table.
- The site is not mapped in a groundwater flood risk area and there are no water features within 100m distance.
- The basement will not result in an increase in hard surfacing and does not lie in a critical drainage area nor a local flood risk zone.
- No trees will be removed as part of the works and there is no history of seasonal shrink swell subsidence in the local area of at site.
- The site and surrounding area do not include slopes with a gradient greater than 7 degrees.
- The proposed basement is within 5m of a highway.
- Excavation of the basement will not significantly increase the differential depth of foundations relative to neighbouring properties. Whilst not stated in the scoping table it is noted that the BIA report confirms that the neighbouring property 159 Arlington Road has an existing basement and the boundary wall to the north (adjacent to the Our Lady of Hal RC Church) has previously been underpinned.
- The site is not within an area identified to have surface water flood risk.

4.10 The items identified to have a response 'yes' have been brought through to Scoping. The Scoping assessment confirms the following:

- London Clay can pose a risk of shrink swell subsidence; however, on visual inspection no indicators of subsidence were observed in the host building. Additionally, the rear extension will be founded at a similar depth to the existing foundations.
- It is unknown if the proposed development will extend below the water table. BGS borehole records suggest groundwater to be c.10.00m bgl; however, the report recommends that a ground investigation is undertaken to determine the depth of groundwater. The findings of the ground investigation are presented in Section 7.0 of the BIA report.
- The underpinning of the front wall will be c.0.90m below the existing lightwell slab level. The report states that as the edge of the front vault is 1.95m from the pavement, the public highway is outside the zone of influence for the proposed underpinning.

4.11 The ground investigation findings determined that groundwater is some 4.90m bgl in the rear garden (1.50m below the proposed foundation level of the basement). However, water ingress was reported in TP2 (situated at the front, church side). The report suggests the water ingress is likely from 'above' rather than from natural groundwater and that the source of the water requires further investigation. The BIA outlines that the anticipated rate of water ingress can be mitigated using submersible dewatering pumps.

- 4.12 It is accepted the development will not impact the local or wider hydrology or hydrogeology of the area.
- 4.13 The BIA confirms that the maximum increase in differential depth between the existing and new foundations is approximately 0.50m, therefore a ground movement assessment is not required. The BIA confirms that the neighbouring buildings house basements and that the party wall along the north boundary was underpinned during construction of the church.
- 4.14 The BIA states the rear basement extension is located 8.50m distance from the Arlington Road pavement so the proposed works will not affect the pavement or public highway. It is accepted the development will not impact the stability of the road.
- 4.15 On the basis of the above, and provided good workmanship is employed, it is accepted that the proposed development will not impact the stability of the neighbouring properties and public highway. It is noted that the report provides estimated settlements and a ground movement / building damage assessment; however, these have not been audited.
- 4.16 The BIA recommends structural visual inspection, and monitoring is undertaken on the adjacent buildings during the demolition, excavation and basement construction phases to mitigate any potential structural damage. Final monitoring requirements will be confirmed with the Contractor and adjoining owner's Surveyor prior to works.

## 5.0 CONCLUSIONS

- 5.1 The Basement Impact Assessment (BIA) has been reviewed by individuals with suitable qualifications.
- 5.2 The BIA has confirmed that the proposed basement will be founded within the London Clay Formation. Site-specific ground investigation identifies the existing foundation depths to inform basement design.
- 5.3 The BIA outlines the construction methodology and sequencing. It recommends temporary propping is installed for the existing basement walls during the site preparation stage.
- 5.4 Mitigation measures for potential water ingress into excavations during the construction works have been provided.
- 5.5 It is accepted that the development will not impact on the local and wider hydrogeology of the area and is not in an area subject to flooding.
- 5.6 It is accepted the development will not impact the hydrology.
- 5.7 The existing foundation depths were identified during the site-specific ground investigation and the BIA identifies that there is no significant increase in differential depths between existing foundations and the new basement. The basement is remote from public highways
- 5.8 It is accepted the basement, provided good workmanship is employed, will not impact the stability of the neighbouring properties and public highway.
- 5.9 The BIA recommends a movement monitoring strategy during excavation and construction as mitigation measures.
- 5.10 It is confirmed that the BIA complies with the requirements of CPG: Basements and the Principles for Audit set out in the Basement Impact Assessment (BIA) Audit Service Terms of Reference & Audit Process.

## Appendix 1

### **Consultation Responses**

None

## Appendix 2

### **Audit Query Tracker**

None

## Appendix 3

### **Supplementary Supporting Documents**

None



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